

## **REMARKS**

Claims 1-20 and 22 are pending.

The drawings are objected to.

Claim 21 is rejected under 35 USC 112, first paragraph.

Claims 1-14 and 20 are rejected under USC 103 (a).

Claims 1 and 20 are amended.

New claim 23 is added.

Support for the limitations can be found in the specification at FIG. 3F and the accompanying text.

No new matter is added.

Claims 1-20 and 22-23 remain in the case.

Applicant requests reconsideration and allowance of the claims in light of the above amendments and following remarks.

### **Drawing Objections**

The drawings are objected to under 37 CFR 1.83(a). The Examiner stated that “a cross hatching of materials in figure 3, for example: first, second or inner dielectric layers” must be shown or the feature(s) canceled from the claim(s).”

Applicant submits herewith revised annotated drawings FIGS. 3A-3F with cross-hatched first, second or inner dielectric layers. Accordingly, the objections are overcome. Applicant will submit replacement drawings upon allowance.

### **Telephone Interview with the Examiner**

During the telephone interview with the Examiner on September 30, the Examiner clarified the Response to Arguments in the official action dated July 1, 2003. Applicant and the Examiner also discussed the phrase, “vertically aligned” to replace the phrase “directly overlying,” but did not reach an agreement.

### **Claim Rejections – 35 USC 112**

Claim 21 is rejected under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 21 has been cancelled. Also, the terms, “directly overlying” has been deleted from claims 1 and 20. Thus, the rejection under section 112 is moot.

### **Claim Rejections – 35 USC 103(a)**

Claims 1-5, 9, 12-14, and 20 are rejected under USC 103 (a) as being unpatentable over U.S. Patent 5,723,822 issued to Lien (“Lien”) in view of U.S. Patent 5,773,899 issued to Zambrano (“Zambrano”).

Claims 6 –7 are rejected under 35 USC 103(a) as being unpatentable over Lien in view of Zambrano and further in view of U.S. Patent 6,307,264 issued to Fukumoto (“Fukumoto”).

Claim 8 is rejected under 35 USC 103(a) as being unpatentable over Lien in view of Zambrano and in further view of U.S. Patent 6,369,409 issued to Takes et al. (“Takes”).

Claims 10-11 are rejected under 35 USC 103(a) as being unpatentable over Lien in view of Zambrano and further in view of U.S. Patent 6,204,454 issued to Gotoh et al. (“Gotoh”).

The rejections are respectfully traversed.

According to an embodiment, in the present invention, an exposed portion of the second metal layer 112 (i.e., the bonding pad) is positioned above and overlapping the polysilicon film plate 104. This structure improves the resistance of the bonding pad to stress, when a wire bonding process is performed on a bonding pad, as is apparent to one skilled in the art. This is because the polysilicon film plate 104 can absorb the thermo-mechanical stress being applied on the bonding pad during wire bonding. See page 6, lines 4-10 of the present application.

To further clarify this aspect of the present invention, claim 1 is now amended to recite,

“a first metal layer formed on the polysilicon film plate through the first opening;  
an inter-metal dielectric (IMD) layer formed overlying the first metal layer, the inter-metal dielectric layer having a second opening that exposes a region of the first metal layer;

a second metal layer formed on the first metal layer in the second opening; and  
a passivation layer formed overlying the second metal layer, the passivation layer having a third opening that exposes a region of the second metal layer as a bonding pad, the bonding pad *positioned above and overlapping* the polysilicon film plate.” (Emphasis added)

In contrast, in Lien, the bonding pad 115 of Lien, i.e., the exposed portion of the metal layer 116, is not positioned above and does not overlap the polysilicon gate 105. Therefore, the structure disclosed in Lien would not absorb the stress being applied on the bonding pad during wire bonding, as in the claimed invention.

Thus, the cited references, either alone or in combination, do not teach or suggest all of the limitations of claim 1. Accordingly, the rejection does not present a *prima facie* case of obviousness. Thus, applicants respectfully request that section 103 rejections be removed. Therefore, claim 1 is allowable and claims 2-14, which depend therefrom and recite features that are neither taught nor disclosed in the cited references, are also allowable.

Also, for the reasons discussed above, claim 20, which recites similar limitations to claim 1, is allowable and claim 22, which depends from claim 20 and recites a feature that is neither disclosed nor taught in the cited references, is allowable. In particular, nothing in Lien at col. 2, lines 51-67 teaches or suggests that the polysilicon film plate absorbs thermal mechanical stress induced in the bonding pad during wire bonding. Instead, Col. 2, lines 51-67 of Lien teaches a low cost technique to improve adhesion between the bonding pad and the underlying insulating layer. See col. 3, lines 4-6 of Lien.

With respect to claim 23, none of the cited references teach or suggest:

“a first metal layer formed *directly* on the polysilicon film plate through the first opening;

an inter-metal dielectric (IMD) layer formed overlying the first metal layer, the inter-metal dielectric layer having a second opening that exposes a region of the first metal layer;

a second metal layer formed *directly* on the first metal layer in the second opening;  
and

a passivation layer formed overlying the second metal layer, the passivation layer having a third opening that exposes a region of the second metal layer as a bonding pad, the bonding pad *overlying* the polysilicon film plate,” as recited in new claim 23. (Emphasis added) Therefore, claim 23 is allowable.

For the foregoing reasons, reconsideration and allowance of claims 1-20 and 22-23 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

**Customer No.**

**20575**

PATENT TRADEMARK OFFICE

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.



---

Alan T. McCollom  
Reg. No. 28,881

MARGER JOHNSON & McCOLLOM  
1030 SW Morrison Street  
Portland, OR 97205  
(503) 222-3613

**IN THE DRAWINGS**

Applicant submits herewith revised annotated drawings FIGS. 3A-3F, as requested by the Examiner. Applicant will submit replacement drawings upon allowance.